

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/011082

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K39/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal, BIOSIS, CHEM ABS Data, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>FERNANDEZ R C ET AL: "CLONING AND SEQUENCING OF A BORDETELLA PERTUSSIS SERUM RESISTANCE LOCUS" INFECTION AND IMMUNITY, AMERICAN SOCIETY FOR MICROBIOLOGY. WASHINGTON, US, vol. 62, no. 11, November 1994 (1994-11), pages 4727-4738, XP000971412 ISSN: 0019-9567 figure 4 page 4731, right-hand column page 4736, right-hand column, last paragraph</p> <p>-----</p> <p>-/--</p>	1-70

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

29 March 2005

Date of mailing of the international search report

12.07.2005

Name and mailing address of the ISA

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>PARKHILL J ET AL: "COMPARATIVE ANALYSIS OF THE GENOME SEQUENCES OF BORDETELLA PERTUSSIS, BORDETELLA PARAPERTUSSIS AND BORDETELLA BRONCHISEPTICA" NATURE GENETICS, NATURE AMERICA, NEW YORK, US, vol. 35, no. 1, September 2003 (2003-09), pages 32-40, XP008044372 ISSN: 1061-4036 the whole document</p> <p>-----</p>	1-70
A	<p>US 5 885 587 A (ECKHARDT ET AL) 23 March 1999 (1999-03-23) abstract</p> <p>-----</p>	1-70
A	<p>HEININGER ULRICH ET AL: "Evidence of efficacy of the Lederle/Takeda acellular pertussis component diphtheria and tetanus toxoids and pertussis vaccine but not the Lederle whole-cell component diphtheria and tetanus toxoids and pertussis vaccine against Bordetella parapertussis infection" CLINICAL INFECTIOUS DISEASES, vol. 28, no. 3, March 1999 (1999-03), pages 602-604, XP008044356 ISSN: 1058-4838 page 604, left-hand column, last paragraph</p> <p>-----</p>	1-70

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 69 and 70 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.: 71
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-71 partially

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.1

Although claims 69 and 70 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.

Continuation of Box II.2

Claims Nos.: 71

Claim 71 lacks any structural or technical feature. The claim is so vague that a meaningful search over its scope is not possible.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

Invention 1: (1-71) - partially

Immunogenic composition comprising the B. pertussis antigen BrkA (SEQ ID NO:34); immunogenic composition comprising the gene encoding BrkA (SEQ ID NO:33). Vaccines comprising said immunogenic compositions. Method for treating or preventing Bordetella infection involving the use thereof.

Inventions 2-55: Claims 1-71 (partially)

Idem as invention 1, but referred to each one of the even-numbered sequences SEQ ID NOs:2-110 respectively, except SEQ ID NO:34.

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5885587	A	23-03-1999	AU 8033591 A	16-01-1992
			CA 2046543 A1	12-01-1992
			EP 0484621 A2	13-05-1992
			FI 913350 A	12-01-1992
			JP 4230328 A	19-08-1992
			NO 912713 A	13-01-1992
			PT 98257 A	30-04-1992
			US 5895655 A	20-04-1999
			US 5885586 A	23-03-1999
			US 5897867 A	27-04-1999
